CJ370P/I
(Pisa/Isa)

Pentium III Half-Size CPU Card With VGA,
Audio & Dual LAN

User's Manual

Version 1.4b

(C) CJB Computer Job Srl - www.cjb.it - sales@cjb.it

Copyright Notice

This publication is protected by copyright and all rights are reserved. No part of it may be reproduced or transmitted by any means or in any form, without prior consent of the original manufacturer.

The information in this document has been carefully checked and is believed to be accurate. However, the original manufacturer assumes no responsibility for any inaccuracies that may appear in this manual. In no event will the original manufacturer be liable for direct, indirect, special, exemplary, incidental, incidental or consequential damages resulting from any defect or omission in this manual, even if advised of possibility of such damages. The material contained herein is for informational purposes only.

Acknowledgments

Award is a registered trademark of Award Software International, Inc.
S3 is a trademark of S3 Technologies Inc.
IBM, PS/2 are trademarks of International Business Machines Corporation.
Intel, PentiumIII and Celeron are registered trademarks of Intel Corporation.
Microsoft Windows is a registered trademark of Microsoft Corporation.
All other product names or trademarks are properties of their respective owners.

C.J.B. Computer Job Srl
Via Ghislandi, 24 - 25125 BRESCIA - Italy

Phone.: +39030-3531883
Fax.: +39030-349557
Website: http://www.cjb.it
E-mail: sales@cjb.it

Contents

Chapter 1 Introduction 1

Checklist **2**
Description **2**
Features **4**
Specifications **6**
Intelligence **9**

Chapter 2 Installation 11

CPU Installation **12**
Memory Installation **13**
Jumpers on the CJ-370P/I-CAN **13**
Jumper Locations on the CJ-370P/I-CAN 14
JP5 ~ JP6: CPU Frequency Selector 15
JP7 LCD PANEL Power Selection 16
JP8: CMOS RAM Data 16
JP9 JP10: WatchDog Timer Period Selection 17
JPCOM4: COM2 RS232/RS422/RS485 Selection 17
Connectors on the CJ-370P/I-CAN **18**
Connector Locations on the CJ-370P/I-CAN 19
Front Panel Connector 20
CPU Fan Power Connector 21
USB Connectors 21
EIDE Connectors 22
Floppy Drive Connector 24
Parallel Port Connector 25
COM1 Serial Port 26
COM2 Serial Port 26
COM3 Serial Port 27
COM4 Serial Port 27
External PS2 Mouse Connector 28
PS/2 Keyboard & Mouse Connector 28
VGA Connector 29
IrDA Connector 29
ATX Power Connector 30
LAN- RJ45 Connector 30
LAN LEDs 30

AT Power P8 Connector 31
CD_IN Connectors..... 31
Audio Connectors 32
Watchdog Timer Configuration 32

Chapter 3 BIOS Configuration 34

BIOS Introduction 35
Starting Setup..... 35
Using Setup..... 36
Getting Help..... 36
In Case of Problems 37
Main Menu 38
Standard CMOS Features 38
Advanced BIOS Features 38
Advanced Chipset Features..... 38
Integrated Peripherals..... 39
Power Management Setup..... 39
PnP / PCI Configuration..... 39
PC Health Status 39
Frequency/Voltage Control..... 39
Load Fail-Safe Defaults 39
Load Optimized Defaults..... 39
Supervisor / User Password..... 39
Save & Exit Setup..... 39
Exit Without Save 39
Standard CMOS Setup..... 40
Primary HDDs / Secondary HDDs 42
Drive A / Drive B..... 44
Video..... 44
Halt On..... 44
Advanced BIOS Features..... 45
Virus Warning..... 45
CPU Internal Cache/External Cache..... 46
CPU L2 Cache ECC Checking 46
Processor Number Feature..... 46
Quick Power On Self Test 46
First/Second/Third/Other Boot Device..... 46
Swap Floppy Drive 46
Boot Up Floppy Seek..... 46
Boot Up NumLock Status..... 47
Gate A20 Option..... 47
Typematic Rate Setting..... 47

Typematic Rate (Chars/Sec) 47
Typematic Delay (Msec) 47
Security Option 47
OS Select For DRAM > 64MB 48
Video BIOS Shadow 48
C8000 - CBFFF Shadow/DC000 - DFFFF Shadow 48
Advanced Chipset Features 49
DRAM Settings 49
DRAM Timing By SPD 50
DRAM Clock 50
SDRAM Cycle Length 50
Memory Hole 50
System BIOS Cacheable 50
Video RAM Cacheable 50
Frame Buffer Size 51
AGP Aperture Size 51
Panel Type 51
Boot Device Select 52
Power-Supply Type 52
OnChip USB 52
USB Keyboard Support 52
USB Mouse Support 52
OnChip Sound 53
Integrated Peripherals 54
OnChip IDE Channel 0 54
OnChip IDE Channel 1 54
IDE Prefetch Mode 55
Primary/Secondary Master/Slave PIO 55
Primary/Secondary Master/Slave UDMA 55
Init Display First 55
IDE HDD Block Mode 55
Onboard FDC Controller 55
Onboard Serial Port 1/Port 2 56
UART 2 Mode 56
IR Function Duplex 56
TX,RX inverting enable 56
Onboard Parallel Port 56
Onboard Parallel Port Mode 56
ECP Mode Use DMA 56
EPP Mode Select 57
Onboard Serial Port 3/Port 4 57

Serial Port 3/Port 4 Use IRQ 57
Power Management Setup 58
ACPI Function 58
Power Management 58
PM Control by APM 59
Video Off Option 59
Video Off Method 60
MODEM Use IRQ 60
PM Events 60
VGA 60
LPT & COM 60
HDD & FDD 60
PCI Master 60
Modem Ring Resume 60
RTC Alarm Resume 60
IRQs Activity Monitoring 61
PnP/PCI Configuration Setup 62
PNP OS Installed 62
Reset Configuration Data 62
Resource controlled by 62
IRQ Resources 63
DMA Resources 63
PCI/VGA Palette Snoop 63
Assign IRQ For VGA/USB 63
PC Health Status 64
Current CPU Temperature 64
Current System Temp. 64
Current CPU FAN Speed 64
Vcore/2.5V/3.3V/5V/12V Voltages 64
Frequency/Voltage Control 65
Auto Detect DIMM/PCI CLK 65
Spread Spectrum Modulated 65
CPU Host Clock (CPU/PCI) 65
Load Fail-Safe Defaults 66
Load Optimized Defaults 66
Supervisor/User Password Setting 67
Exit Selecting 68
Save & Exit Setup 68
Exit Without Saving 68

Appendix 69

A. I/O Port Address Map..... 70
B. Interrupt Request Lines (IRQ)..... 71
C. POST Beep..... 72
D. LCD Connector..... 73

This page was intentionally left free

1

Introduction

This manual will give you information on the CJ-370P/I-CAN SBC card. The topics covered in this chapter are as follows:

- Checklist
- Description
- Features
- Specifications
- Intelligence

Checklist

Please check that your package is complete and contains the items below. If you discover damaged or missing items, please contact your dealer.

- ✓ The CJ-370P/I-CAN Industrial SBC Card
- ✓ 1 ATA66/100 IDE Ribbon Cable
- ✓ 1 Floppy Ribbon Cable
- ✓ 1 Serial Port Ribbon Cable and 1 Parallel Port attached to a Mounting Bracket
- ✓ 1 Serial Port Ribbon Cable attached to a Mounting Bracket
- ✓ 1 CD Disc Containing S3 VGA Drivers, RealTek 8100B LAN Driver, VIA chipset drivers, BIOS Update Utility and this User's manual.
- ✓ PS/2 Keyboard and Mouse 1-to-2 Y-cable

Description

The CJ-370P/I-CAN is a Pentium III Industrial single board computer card based on VIA 8606 chipset and is fully designed for harsh industrial environment. It features one Socket370, that is compatible with Intel FC-PGA package Pentium III processor. This card accommodates up to 512MB of PC133 SDRAM memory.

The CJ-370P/I-CAN is a high integration CPU. Two RealTek 8100B Fast Ethernet Controllers, ALC201A Audio codec and S3 4X AGP Video controller are integrated into the system. The high-integration design prevents the system compatibility issues and increases the PCI add-on cards scalability. This makes CJ-370P/I-CAN an ideal SBC card for Automation, Embedded control, Thin client as well as other industrial applications.

CJ-370P/I-CAN provides the most complete features needed for system operation. These include 10/100 TX LAN adapter, Ultra DMA 66/100 IDE drive controllers, high performance serial ports, enhanced parallel port, and the most updated BIOS. Two USB ports, one

RS232/422/485 port and a programmable watchdog timer are available on-board. The CPU card also provides a LCD panel interface for connecting a Direct-Drive LCD Panel. The LVDS interface is also reserved to support latest LVDS Panel. What's more, the VIA Twister-T chipset on-board card incorporates the latest microprocessor technology to provide the increased bandwidth needed to operate your system bus at speeds up to 133 MHz.

The CJ-370P/I-CAN comes with VIA integrated hardware monitoring device that monitors system and CPU temperature, voltages of all system power rails, and CPU fan speeds to prevent system crashes by warning the user of adverted conditions. The power management feature provides power savings by slowing down the CPU clock, turning off the monitor screen and stopping the HDD spindle motor.

The CJ-370P/I boards are THE SAME BOARD with two passive bus interfaces: the CJ-370P has PISA (PCI-ISA) bus interface, while the CJ-370I has ISAbus interface.

Nevertheless, the two boards are 100% identical.

This manual so refers to any of the two CJ-370 versions. However, remember that only the PISA version will be able to drive PCIbus add-on cards (using suitable PISA passive backplanes).

Features

- **High-Speed Processors:** Supports Intel FC-PGA Pentium III and Celeron Processor from 500 to 1.4GHz or above with 66/100/133MHz FSB Speed.
- **Low-Power Processors:** Fully support Intel Coppermine, Tualatin and VIA C3 processor. Both Intel Tualatin and VIA C3 CPU adapt 0.13 process and operate at lower voltage. This provide the CJ-370P/I-CAN system as a low power consumption system.
- **VIA Twister-T AGPset:** Features VIA Twsiter-T AGPset with I/O subsystems and front-side bus (FSB) platform, which boosts the traditional 66/100MHz internal bus speed to **133MHz.**
- **PC133 Memory Support:** Equipped with one DIMM sockets to support Intel PC100/PC133-compliant SDRAM (8, 16, 32, 64, 128MB, 256MB or 512MB). Up to 512MB of PC133 SDRAM system memory.
- **Flexible Memory Speed:** The System memory bus speed can be equal to CPU FSB and –33MHz or +33MHz of FSB Speed. This gives users more flexibility to choose different memory technology.
- **ECC function support:** Processor front-side bus (FSB) and Memory subsystem support ECC function for Fault-tolerant application.
- **10/100Base-T Fast Ethernet:** Features Two RealTek Fast Ethernet controllers that boost network performance, increase the networking bandwidth and reliability, enhanced system manageability and offers the proven compatibility.
- **Integrated S3 Savage4 2D/3D/Video Accelerator:** The VIA Twister-T chipset integrated S3 Savage4 2D/3D/Video accelerator in Shared Memory Architecture (SMA). The 2D hardware accelerator, 3D rendering engine, MPEG-2/DVD decoder are integrated. The frame-buffer size can be adjust in BIOS setup and stored in CMOS.
- **Direct Interface to broad range of LCDs:** Two LCD connectors support wide range of LCD panels, includes SXGA+ TFT color panel with 9-, 12-, 18- (both 1 pixel/clock and 2 pixels/clock), and 24-bit; VGA, SVGA, XGA dual-scan/single scan color panels with 8-bit, 16-bit

and 24-bit interface; Enhanced STN hardware with 256 gray scale support and advanced frame rate control to provide 16M colors. The latest LVDS panel is also supported.

- **PCI Bus Master IDE Controller:** Two enhanced IDE channels for up to four devices, support PIO Mode 3/4 or Ultra DMA/33/66 IDE Hard Disk, ATAPI CD-ROM, LS-120 drive and DOM. The Secondary IDE is interfaced with a 44-pin 2mm pitch connector. It supports 2.5" HDD directly as well as 44-pin DOM without additional power connector.
- **Watch-Dog Timer:** 4 level programmable watchdog timer, from 10-80 seconds.
- **Super Multi-I/O:** Provides four high-speed UART compatible serial ports and one parallel port with SPP, EPP and ECP capabilities. The COM4 can be configured as RS-232, RS-422 or RS485 interface.
- **IrDA:** Support an optional infrared port module for wireless interface.
- **Concurrent PCI:** Allows multiple PCI transfers from PCI master buses and AGP bus to memory to CPU.
- **Hardware Monitoring:** Features VIA integrated Hardware Monitor to monitor all the power rails as well as CPU and board temperature.
- **Enhanced ACPI:** Features a programmable BIOS (Flash EEPROM), Offering enhanced ACPI for Windows compatibility and auto-detection of most devices for virtually automatic setup.
- **3D Enhanced AC97 Audio Codec:** ALC201A features the high S/N ratio (> 90dB) and 3D enhancement. Two pin-headers allow user to wire CD_IN, Line-out and Mic signals to Front panel or bridge board. Complete OS drivers and Applications are bundled in Driver CD.

Specifications

- **Processor Socket**: Socket370 for FC-PGA and FC-PGA2 CPU.
- **Processor**:
  - Intel FC-PGA/FC-PGA2 Pentium III 600/650/667/750/800/850/866/933/1000/1113MHz and above (100MHz FSB or 133 MHz FSB)
  - Intel Celeron Processor 533/566/600/633/337/700/733/766/800/850/900/1000/1200 MHz and above (66MHz FSB or 100MHz FSB)
  - VIA C3 Processor 700/766/800/866/933 MHz and above (66M/100M/133MHz FSB)
  - Intel latest Tualatin and VIA C3 low power processors are supported.
- **Chipset**: VIA Twister-T and 82686B with PCI EIDE, Super-IO and RTC built-in.
- **Secondary Cache**: 512K(Tualatin), 256K(Coopermine) or 128KB(Celeron) L2 cache integrated in CPU and runs on CPU core frequency.
- **Memory Sockets**:
  One 168-pin DIMM socket
  Memory types: 3.3V SDRAM (Synchronous DRAM) support 8MB to 512MB memory capacity. Both ECC and non-ECC Memory module are supported.
  NOTE: Only SDRAM modules that support SPD (Serial Presence Detect) should be use. Use PC133 modules when running 133MHz Memory bus speed and use PC133/PC100 modules when running133MHz memory bus speed.
- **BIOS**: Award BIOS, PnP support
  - FLASH EEPROM (256KB) for BIOS update
  - Enhanced ACPI BIOS and DMI 2.0
  - ISA Plug and Play (PnP) extension
  - Power management
  - Anti-Boot Virus
- **DMI BIOS Support**:
  Desktop Management Interface (DMI) allows users to download system hardware-level information such as CPU type, CPU speed, internal/external frequencies and memory size.

- **Multi I/O**:
  - **Parallel Port**: One high-speed parallel port, SPP/EPP/ECP mode.
  - **Serial Port**: Four 16550 UART compatible ports with COM1, COM2 and COM3 as RS232. COM4 can be RS-232/422/485.
  - **IrDA Interface**: Pin-header connector for the optional IrDA external connector
  - **Enhanced IDE**: Two EIDE interfaces for up to four devices, support PIO Mode 3/4 or Ultra DMA/33/66 IDE Hard Disk, ATAPI CD-ROM, DOM and LS-120 drive
  - **FDD Interface**: Two floppy drives (360KB, 720KB, 1.2MB, 1.44MB, 2.88MB)
  - **S3 Savage4** : VIA 8606 integrates S3 Savage4 2D/3D/Video accelerator.
    - Optimized Shared Memory Architecture (SMA).
    - 8 / 16 / 32 MB frame buffer using system memory, selected by user through BIOS setup.
    - High quality DVD video playback.
    - **2D/3D resolutions up to 1920x1440.**
    - Motion compensation for full speed DVD playback and MPEG-2 video textures.
    - Extensive LCD Support, includes 36-bit DSTN/TFT flat panel interface with 256 gray shade support, one 110 MHz LVDS interface, **Support for all resolutions up to 1600x1200**, Panel power sequencing, Hardware Suspend/Standby control.
    - Drivers for major operating systems and APIs: [Windows 9x, Windows NT 4.0, Windows 2000, Direct3D, DirectDraw and DirectShow, OpenGL ICD for Windows 9x, NT, and 2000]
- **USB Interface**: Two USB ports interfaced with one 2x5 pin-header, compliant with USB Specification Rev. 1.1 and support USB Hot-Plug function.
- **ATX Power Supply support:**
  - On-board 4-pin ATX power supply header (requires the passive backplane supports ATX power supply)

- On-board power button header for Soft power off, i.e. front panel turn off system power.
- Support Win95 and Win98 shutdown automatically turn off the system power.

- **Hardware Monitor System:**
  - PC Health Monitoring ASIC supports system power voltages, FAN speed and system temperatures monitoring.
  - One FAN connector and one thermal couple header reserved for chassis FAN and temperature monitoring.

- **Watchdog Timer**:
  - Read I/O port 0443H to enable watchdog.
  - Read I/O port 043H to disable watchdog.
  - 10s, 20s, 30s and 80s timeout period selectable.

- **Green unction**: Power management via BIOS, activated through mouse/keyboard movement or SMI button

- **Keyboard and Mouse Connectors**: One 6-pin mini-DIN connector is located on the mounting bracket for easy connection to a keyboard and PS/2 mouse. A 5-pin on-board pin-header is also available to support PS2 mouse.

- **PISA Compliance**: Fully compliant to PISA Rev 1.7 specification.

- **Environmental and Mechanical**:
  - **Power Supply:** 5A@ +5v typical; 300mA@ +12v typical 100mA@ -12V typical; 200mA@ +5VSTB (Option)
  - **Temperature**: 0°C to 60°C operating; -40°C to 70°C storage
  - **Humidity**: 5% to 95%
  - **Dimensions**: 7.28"(L) x 5.0"(W) or 185mm (L) x 127mm (W)

Intelligence

- **Support 133MHz CPU and SDRAM**: The VIA 8606 Twister-T chipset boosts the CPU FSB bus and Memory interface speed to 133MHz.
- **Flexible Memory Speed:** The Memory bus speed can be same with CPU FSB speed (Default). It is also allow users to run 133MHz PC133 memory while CPU runs on 100MHz FSB. Or Boost CPU FSB speed to 133MHz while use low cost PC100 zMemory module. No compromise and better flexibility.
- **High-Integrated 2D/3D/VIDEO Accelerator:** The built-in S3 Savage4 VGA chip support AGP 4X mode with Sideband Addressing and AGP Texturing (Execute mode) to realize all the benefits of AGP. The Share Memory Architecture (SMA) allows user to decide how many main memory size will be allocated for video graphic buffer. This saves system cost yet reserve room for applications which require large frame buffer size.
- **Dual LAN Design:** Two 10/100M Ethernet provide aggregated bandwidth can be up to 400Mbps while two ports working on full-duplex 100-BaseT. The dual port design fulfill the needs of emerging Internet appliances, NAS as well as servers applications. . The drivers for most popular Operation systems and NOS have been validated and proved the compatibility. It also supports latest network standards and protocols like speed auto-negotiation between 10Base-T and 100Base-T, half/full duplex (IEEE8023.3u), flow-control (IEEE8023X), VLAN (IEEE802.3Q), Priority packet(IEEE802.3P) and etc. The multi-protocols support ensures the best interoperability.
- **Two EIDE channels:** Two IDE channels designed in the small PISA form factor. The Secondary IDE connector is designed with 44-pin 2mm pitch connector. This allow user connector to a 2.5" HDD directly with out any bridge board. DOM users can choose 44-pin DOM for small package and save power cable connector.

This page is intentionally left blank.

2

Jumpers & Connectors

This chapter provides information on how to use the jumpers and connectors on the CJ-370P/I-CAN in order to set up a workable system. The topics covered are:

CPU Installation 12
Memory Installation 13
Jumpers on the CJ-370P/I-CAN 13
Connectors on the CJ-370P/I-CAN 18
Watchdog Timer Configuration.....32

CPU Installation

The CJ-370P/I-CAN Industrial SBC Card has a 370-pin ZIF socket for Pentium II/III-processors and Celeron with FC-PAG and PPGA (Plastic Pin Grid Array) package.

Before installing the processor into the Socket, ensure that the CPU fan is installed first. Without a fan circulating air on the CPU, the CPU can overheat and cause damage to both CPU and SBC card.

To Install a CPU, first turn off your system and remove its cover. Locate the ZIP socket and open it by first pulling the lever sideways away from the socket then upwards to a 90-degree right angle. Insert the CPU with the correct orientation. Use the notched corner of the CPU with the white dot as your guide. The white dot should point towards the end of the lever. Notice that there is a blank area where one hole is missing from that corner of the square array of pin holds. Because the CPU has a corner pin for three of the four corners, the CPU will only fit in one orientation. With the added weight of the CPU fan, no force is required to insert the CPU. Once completely inserted, hold down on the fan and close the socket lever.

To disassembly the processor, simply pull the lever sideways away from the socket then upward to a 90-degree right angle. You can take the CPU out from the socket without help of any tool.

WARNING!: If no FAN circulating Air on the CPU, the processor might been overheated and damage both CPU and SBC components.

Memory Installation

The CJ-370P/I-CAN Industrial CPU Card has one 168-pin DIMM socket for a maximum total memory of 512MB SDRAM. The memory modules can come in sizes of 16MB, 32MB, 64MB, 128MB 256MB and 512MB SDRAM.

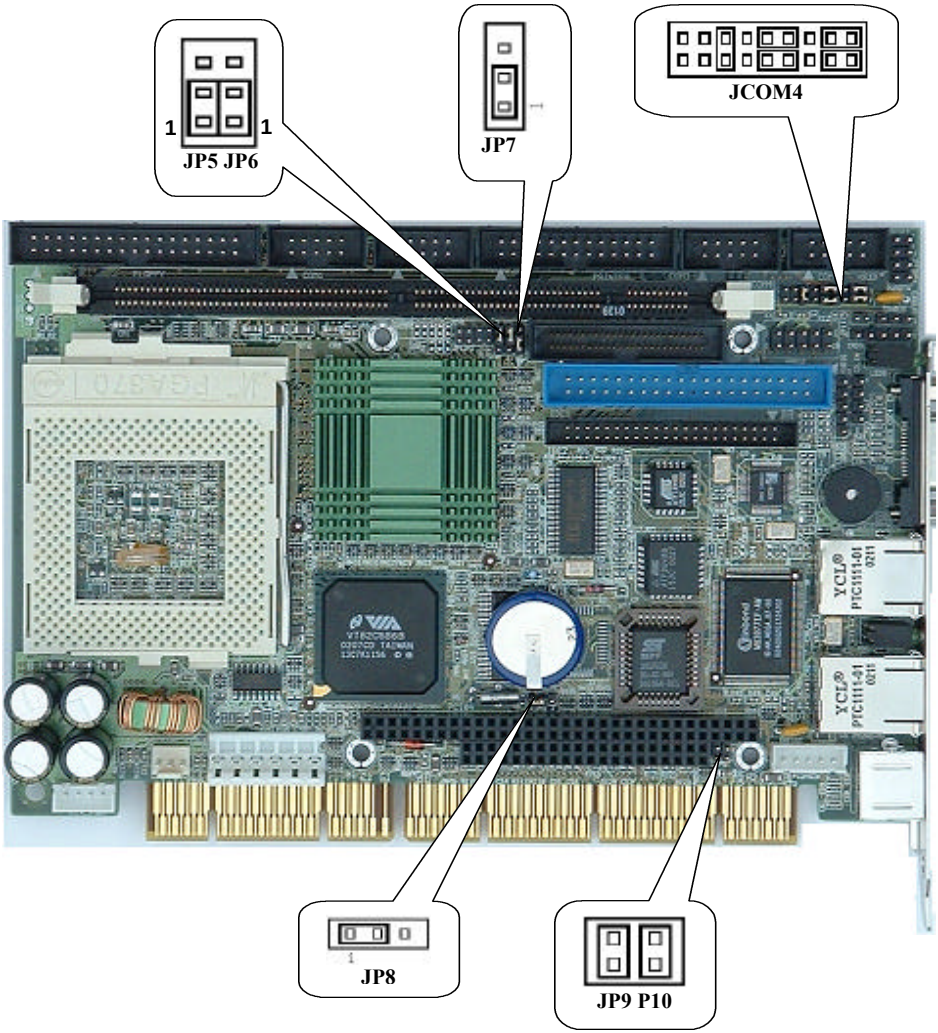
NOTE: *Use SDRAM modules with PC133 specification when running 133Mhz Memory bus speed. With 100MHz Memory bus speed, SDRAM modules meet PC133 or PC100 specification can be used.*

Jumpers on the CJ-370P/I-CAN

The jumpers on the CJ-370P/I-CAN allow you to configure your SBC card according to the needs of your applications. If you have doubts about the best jumper configuration for your needs, contact your dealer or sales representative. The following table lists the jumpers on CJ-370P/I-CAN and their respective functions.

Jumper Locations on the CJ-370P/I-CAN 14
JP5 ~ 6 : CPU Frequency Selector 15
JP7 : LCD Panel Power Selection 16
JP8 : Clear CMOS RAM Data.....16
JP12~13 : WatchDog Timer Period Selection..... 17
JCOM4 : COM4 RS232/RS422/RS485 Selection.....17

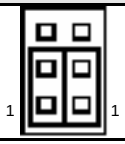
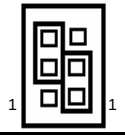
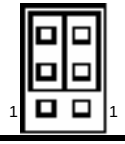
Jumper Locations on the CJ-370P/I-CAN



The ISAbus version is the same, except the passive-bus connector at the bottom

JP5 ~ JP6: CPU Frequency Selector

JP5 and JP6 allow users to select the CPU FSB speed. It can be 66MHz, 100MHz or 133MHz. Most of Pentium III CPU runs on 100MHz or 133MHz FSB. However, Some Celeron CPUs run on 66MHz or 100MHz. User should select the correct FSB speed to make their CPU run on correct speed and ensure the system runs stably.

JP5~JP6	Setting	Function
	JP5: Pin 1-2 Short JP6: Pin 1-2 Short	**133MHz** CPU FSB
	JP5: Pin 2-3 Short JP6: Pin 1-2 Short	**100MHz** CPU FSB
	JP5: Pin 2-3 Short JP6: Pin 2-3 Short	**66MHz** CPU FSB

The Core Frequency to Bus clock ratio of most of Intel Pentium III is locked. Users do not require to change Jumpers JP5~6. These Jumpers are reserved for Internal test purpose only.

NOTE: *The BIOS setup Default value will program the SDRAM Memory bus runs on same clock speed with CPU FSB, which is decided by JP5~6. However, The CPU clock speed showed on the Boot message is not necessarily present the Memory Bus speed. User's may program the BIOS setup to run Memory bus in different speed. Overclocking your processor and SDRAM module is not recommended. There is no guarantee for any over-speed operation.*

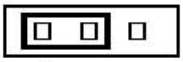
JP7 LCD PANEL Power Selection

JP7 can be used to select the Panel LCD supply power, +3V or +5V. The default setting is on +3V. User need to check the LCD panel spec and adjust this jumper and make Panel work in specified power rail.

+3V	+5
JP7	**JP7**

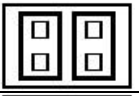
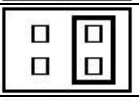
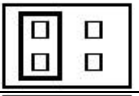
JP8: CMOS RAM Data

This 3-pin Jumper allows the user to disconnect the built-in 3V battery power to clear the information stored in the CMOS RAM. To clear the CMOS data: (1) Turn off the system power, (2) Remove Jumper cap from pin1&2, (3) Short the pin2 and pin3 for three seconds, (4) Put Jumper cap back to pin1& 2. (5) Turn on your computer, (6) Hold Down <Delete> during bootup and enter BIOS setup to enter your preferences.

JP8	Setting	Function
 1	Pin 1-2 Short/Closed	Normal Operation (default)
 1	Pin 2-3 Short/Closed	Clear CMOS Content

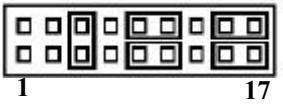
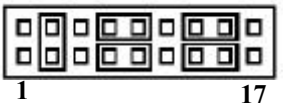
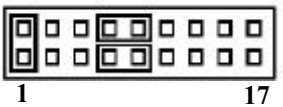
JP9 JP10: WatchDog Timer Period Selection

The WatchDog Timer time-out period can be set 10 sec, 20 sec, 30 sec and 80 sec. The following table describes the jumper settings for the period.

JP9 JP10	Time-out Period
	**10 Sec**
	**20 Sec**
	**30 Sec**
	80 Sec

JPCOM4: COM2 RS232/RS422/RS485 Selection

The COM4 port can be configured to operate with external devices on different interface mode. They are RS-232, RS-422 and RS485. JPCOM4. The following table describes how to configure the COM4 interface.

JPCOM4	I/F TYPE
	**RS-232**
	**RS-422**
	**RS-485**

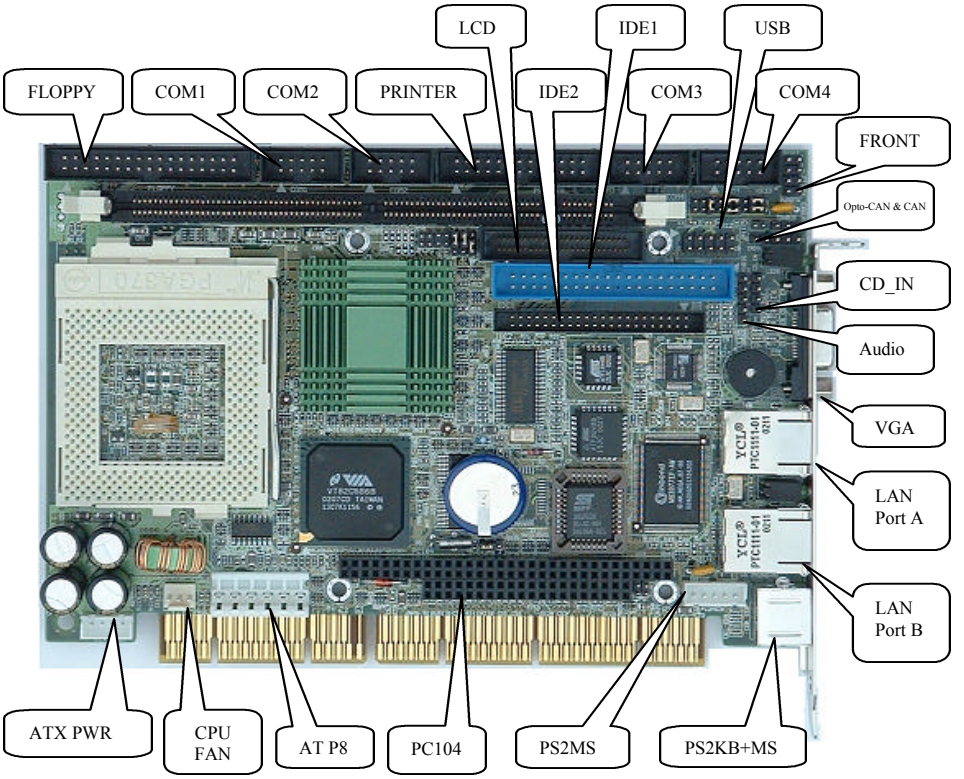
Connectors on the CJ-370P/I-CAN

The connectors on the CJ-370P/I-CAN allow to connect external devices such as keyboard, floppy disk drives, hard disk drives, printers, etc. The following table lists the connectors on CJ-370P/I-CAN and their respective page number.

Front Panel Connector 20
CPU Fans Power Connector 21
USB Connectors 21
EIDE Connectors 22
Floppy Drive Connector 24
Parallel Port Connector 25
COM1 Serial Port 26
COM2 Serial Port 26
COM3 Serial Port 27
COM4 Serial Port 27
External PS2 Mouse Connector 28
PS/2 Keyboard & Mouse Connector 28
VGA Connector 29
Opto-CAN & CANbus Connectors 29
ATX Power Connector 30
LAN- RJ45 Connectors 30
LAN LEDs 30
AT Power P8 Connectors 31
CD_IN Connector 31
Audio Connector 32

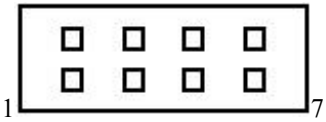
LCD Connector ..... Appendix A

Connector Locations on the CJ-370P/I-CAN

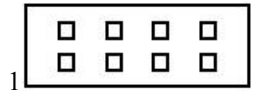


Front Panel Connector

The front panel of the case has a control panel which provides light indication of the computer activities and switches to change the computer status.

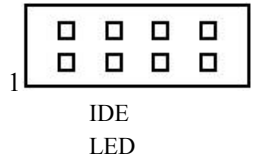


- **RESET Switch**
  The reset switch allows the user to reset the system without turning the main power switch Off and then On. Orientation is not required when making a connection to this header.



RESET Pin #	Signal Name
1	Reset
2	Ground

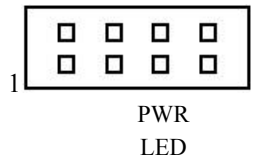
- **IDE Hard Disk LED Connector**
  This connector connects to the hard drive activity LED on control panel. This LED will flash when the HDD is being accessed.



IDE LED Pin #	Signal Name
3	IDE_ACT
4	Ground

- **Power-ON LED Connector**

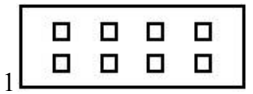
The Power LED provide and interface to wire the system power on signal to front panel



IDE LED Pin #	Signal Name
5	+5V
6	Ground

➢ **ATX Power ON/OFF Button**

This 2-pin connector acts as the "Power Supply On/Off Switch" on the SBC card. When pressed, the switch will force the SBC card to power on. When pressed again, it will force the SBC card to power off.

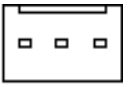


Power Button

PWR BTN Pin #	Signal Name
7	PWR-BTN
8	GND

CPU Fan Power Connector

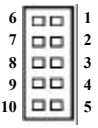
This is a 3-pin header for the CPU fan. The fan must be a 12V fan.



Pin #	Signal Name
1	Rotation
2	+12V
3	Ground

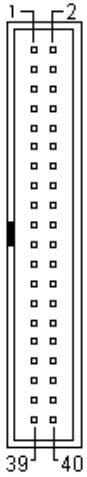
USB Connectors

The following table shows the pin outs of the USB connectors.



USB1 Pin#	USB0 Pin #	Signal Name
10	1	+5V
9	2	USB-
8	3	USB+
7	4	Ground
6	5	N.C.

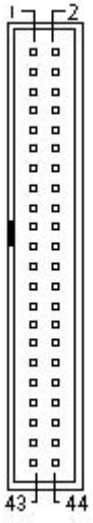
EIDE Connectors



Primary IDE Connector

Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Key
DRQ0	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK0	29	30	Ground
IRQ14	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground

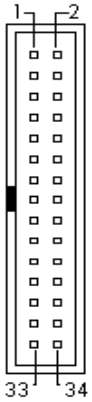
Secondary IDE Connector



Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Key
DRQ1	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK1	29	30	Ground
IRQ15	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground
+5V	41	42	+5V
Ground	43	44	No connect

Floppy Drive Connector

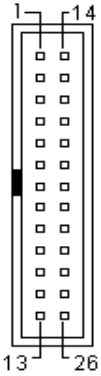
Floppy connector is a 34-pin header and will support up to 2.88MB floppy drives.



Signal Name	Pin #	Pin #	Signal Name
Ground	1	2	RM/LC
Ground	3	4	No connect
Ground	5	6	No connect
Ground	7	8	Index
Ground	9	10	Motor enable 0
Ground	11	12	Drive select 1
Ground	13	14	Drive select 0
Ground	15	16	Motor enable 1
Ground	17	18	Direction
Ground	19	20	Step
Ground	21	22	Write data
Ground	23	24	Write gate
Ground	25	26	Track 00
Ground	27	28	Write protect
Ground	29	30	Read data
Ground	31	32	Side 1 select
Ground	33	34	Diskette change

Parallel Port Connector

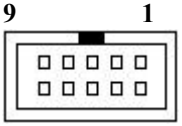
The following table describes the pin out assignments of this connector.



Signal Name	Pin #	Pin #	Signal Name
Line printer strobe	1	14	AutoFeed
PD0, parallel data 0	2	15	Error
PD1, parallel data 1	3	16	Initialize
PD2, parallel data 2	4	17	Select
PD3, parallel data 3	5	18	Ground
PD4, parallel data 4	6	19	Ground
PD5, parallel data 5	7	20	Ground
PD6, parallel data 6	8	21	Ground
PD7, parallel data 7	9	22	Ground
ACK, acknowledge	10	23	Ground
Busy	11	24	Ground
Paper empty	12	25	Ground
Select	13	N/A	N/A

COM1 Serial Port

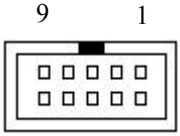
COM1, a 10-pin header connector , is the onboard COM1 serial port of the CJ-370P/I-CAN . The following table shows its pin assignments.



Pin #	Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	RI, Ring indicator
10	N.C.

COM2 Serial Port

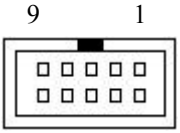
COM2, a 10-pin header connector , is the onboard COM2 serial port of the CJ-370P/I-CAN .The table shows its pin assignments while it is configured as RS-232 interface.



Pin #	Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	RI, Ring indicator
10	N.C.

COM3 Serial Port

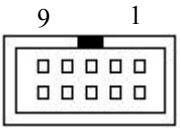
COM3, a 10-pin header connector , is the onboard COM3 serial port of the CJ-370P/I-CAN. The table shows its pin assignments while it is configured as RS-232 interface.



Pin #	Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	RI, Ring indicator
10	N.C.

COM4 Serial Port

COM4, a 10-pin header connector , is the onboard COM4 serial port of the CJ-370P/I-CAN. The table shows its pin assignments while it is configured as RS-232 and RS-422/485. For RS-485 connect TX+/RX+ and TX-/RX-.



Pin #	RS232 Mode Signal Name	RS422/RS485 Mode Signal Name
1	DCD, Data carrier detect	TX- (422/485)
2	RXD, Receive data	TX+ (422/485)
3	TXD, Transmit data	RX+ (422)
4	DTR, Data terminal ready	RX- (422)
5	GND, ground	GND
6	DSR, Data set ready	N.C.
7	RTS, Request to send	N.C.
8	CTS, Clear to send	N.C.
9	RI, Ring indicator	N.C.
10	N.C.	N.C.

Please notice that when set for RS422, the TX output can work only if you assert the RTS output of COM4. This is useful to manage multi-drop connected systems in RS422. See also Page 17 for JPCOM4 settings.

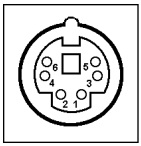
External PS2 Keyboard Connector (valid for both ISA & PISA from Rev 1.4)

Pin #	Signal Name
1	PS2KBD clock
2	PS2KBD data
3	NC.
4	GND
5	+5V

NOTICE:
the assignment of the signals to the white JST header located inside the board (near the Mini-DIN PS2 Mouse & Keyboard Connector) has been changed for BOTH ISA & PISA versions of the CJ370, starting from the version 1.4.
If the sbc is a Rev1.4 or later, DO NOT connect a MOUSE to this connector, otherwise a short between KBD signals will happen and you may have a chance to damage the Mouse/KBD interface chipset.

PS/2 Keyboard & Mouse Connector

The following table describes the pin assignment of PS/2 Keyboard and Mouse connector, which is mount on button of bracket. To attach PS/2 Keyboard and mouse, users need to connect trough a PS/2 1-to-2 Y-cable and plug into this Mini-Din connector. All the P3BVLL SBC boards come with a Y-cable. Contact with your dealer if the Y-cable is missing.



Pin #	Signal Name
1	Keyboard data
2	Mouse data
3	GND
4	5V
5	Keyboard clock
6	Mouse clock

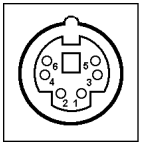
External PS2 Mouse Connector

Pin #	Signal Name
1	PS2MS clock
2	PS2MS data
3	NC.
4	GND
5	+5V

PAGE VALID ONLY UP TO REV.1.3 OF THE BOARD

PS/2 Keyboard & Mouse Connector

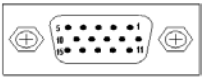
The following table describes the pin assignment of PS/2 Keyboard and Mouse connector, which is mount on button of bracket. To attach PS/2 Keyboard and mouse, users need to connect trough a PS/2 1-to-2 Y-cable and plug into this Mini-Din connector. All the P3BVLL SBC boards come with a Y-cable. Contact with your dealer if the Y-cable is missing.



Pin #	Signal Name
1	Keyboard data
2	Mouse data
3	GND
4	5V
5	Keyboard clock
6	Mouse clock

VGA Connector

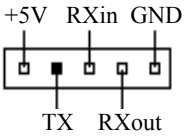
The pin assignments of VGA CRT connector are as follows:



Signal Name	Pin	Pin	Signal Name
Red	1	2	Green
Blue	3	4	N.C.
GND	5	6	GND
GND	7	8	GND
N.C.	9	10	GND
N.C.	11	12	N.C.
HSYNC	13	14	VSYNC
NC	15		

Opto-CAN & CANbus Connectors

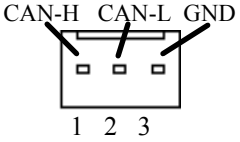
This connector is used for connecting to external CANbus optoinsulator module.



Pin #	Signal Name
1	+5V CAN
2	TX
3	RXin
4	RXout
5	GND CAN

Please ensure that a JUMPER is connecting pins 3+4 if the onboard 82C250 line interface driver/receiver is used; so you will use the onboard non-insulated interface, and you have to connect external devices to CANbus 3-pin connector (see below).

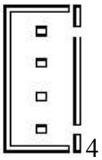
This connector is used for connecting to external CANbus I/O modules.



1	CAN-H
2	CAN-L
3	CAN-GND

ATX Power Connector

This is a four-pin connector to support the ATX power and corresponding back-plane. When your back-plane is configured to perform ATX power supply Soft-on/off function, you have to connect the control signals and stand-by power on this connector to your back-plane by a corresponding cable.

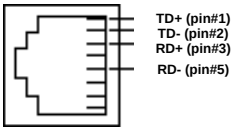


ATX-PWR

Pin #	Signal Name
1	PWR_GD
2	5V_SB (standby +5V)
3	PS-ON (soft on/off)
4	GND

LAN- RJ45 Connector

This connector is for the 10/100Mbps Ethernet capability of the CPU card. The figure below shows the pin out assignments of this connector and its corresponding input jack.



LAN LEDs

The LAN LEDs on top of bracket are to display the current network connection status. The green color LED on the left-hand side shows the link status and TX/RX activity. The Yellow color on the right-hand side indicates the operation mode, i.e. 10Base-T or 100Base-T.

LNK/ACT	STATUS
ON	Link
OFF	Disconnected
FLASH	Packets TX/RX

SPEED	MODE
ON	100Base-T
OFF	10Base-T

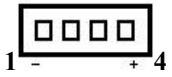
AT Power P8 Connector

The following table describes the pin assignment of on-board AT Power P8 connector. This connector is for the applications which do not require a backplane. Users can connect it to an AT SPS P8 connector to supply the system power. The Power good signal will be generated by the circuit on the SBC card. Pin 1 is replace with +5V power to increase supply current.

Pin #	Signal Name
1	+5V
2	+5V
3	+12V
4	-12V
5	GND
6	GND

CD_IN Connectors

CD_INconnector is designed for wire the CD_ROM audio signals to the on-board Audio CODEC. (It's a LINE Input)



CD-IN Pin #	Signal Name
1	LINE-IN Left
2	AGND
3	AGND
4	LINE-IN Right

Audio Connectors

AUDIO connector is designed for wire the Line-Out audio signals and the MIC Input signal to the on-board Audio CODEC.

AUDIO Pin #	Signal Name
1	Line-OUT_Left
2	Line-OUT_Right
3	AGND
4	MIC Input
5	AGND

Watchdog Timer Configuration

The function of the watchdog timer is to reset the system automatically and is defined at I/O port 0443H. To enable the watchdog timer and allow the system to reset, read I/O port 0443H. To disable the timer, read I/O port 043H for the system to stop the watchdog function. The timer has a tolerance of 20% for its intervals.

The following describes how the timer should be programmed.

Enabling Watchdog
MOV DX, 0443H
IN DX, AX

Disabling Watchdog
MOV DX, 043H
OUT DX, AX

This page is intentionally blank.

3

BIOS Configuration

This chapter describes the different settings available in the Award BIOS that comes with the CJ-370P/I-CAN CPU card. The topics in this chapter are as follows:

BIOS Introduction..... 35
Main Menu..... 38
Standard CMOS Setup..... 40
Advanced BIOS Features..... 45
Advanced Chipset Features..... 49
Integrated Peripherals 54
Power Management Setup 58
PnP/PCI Configurations..... 62
PC Health Status 64
Frequency/Voltage Control..... 65
Load Fail-Safe Defaults 66
Load Optimized Defaults..... 66
Supervisor/User Password Setting..... 67
Exit Selecting..... 68

BIOS Introduction

This Chapter discusses Award™ Setup program of the CJ-370P/I-CAN BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

The AwardBIOS™ installed in CJ-370P/I-CAN is a custom version of an industry standard BIOS. This means that it supports Intel PentiumII/III and Celeron processors in a standard IBM-AT compatible input/output system. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.

It also adds non-standard, features such as virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

The rest of this chapter is intended to guide you through the process of configuring your system using Setup.

Starting Setup

The AwardBIOS™ is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing <Del> immediately after switching the system on, or

2. by pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self-Test).

   Press DEL to enter SETUP.

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Key	Function
Up Arrow	Move to the previous item
Down Arrow	Move to the next item
Left Arrow	Move to the item on the left (menu bar)
Right Arrow	Move to the item on the right (menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
Esc key	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F6 key	Load the fail-safe defaults from BIOS default table
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit

Navigating through the menu bar
Use the left and right arrow keys to choose the menu you want to be in.

To display a sub menu
Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A "➢" pointer marks all sub menus.

Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to

use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AwardBIOS™ supports an override to the CMOS settings which resets your system to its defaults.

The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and CJ-370P/I-CAN manufacturer to provide absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

Main Menu

Once you enter the AwardBIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

Phoenix – AwardBIOS CMOS Setup Utility

➢ Standard CMOS Feature	➢ Frequency/Voltage Control
➢ Advanced BIOS Feature	Load Fail-Safe Defaults
➢ Advanced Chipset Feature	Load Optimized Defaults
➢ Integrated Peripherals	Set Supervisor Password
➢ Power Management Setup	Set User Password
➢ PnP/PCI Configurations	Save & Exit Setup
➢ PC Health Status	Exit Without Saving
Esc : Quit	↑ ↓ ← → : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type….	

Note that a brief description of each highlighted selection appears at the bottom of the screen.

Setup Items

The main menu includes the following main setup categories.

Standard CMOS Features
Use this menu for basic system configuration.

Advanced BIOS Features
Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features
Use this menu to change the values in the chipset registers and optimize your

system's performance.

Integrated Peripherals
Use this menu to specify your settings for integrated peripherals.

Power Management Setup
Use this menu to specify your settings for power management.

PnP / PCI Configuration
Use this menu to set up the PnP/PCI configuration.

PC Health Status
Use this menu to display the CPU temperature, FAN speed and voltages.

Frequency/Voltage Control
Use this menu to specify your settings for frequency/voltage control.

Load Fail-Safe Defaults
Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults
Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

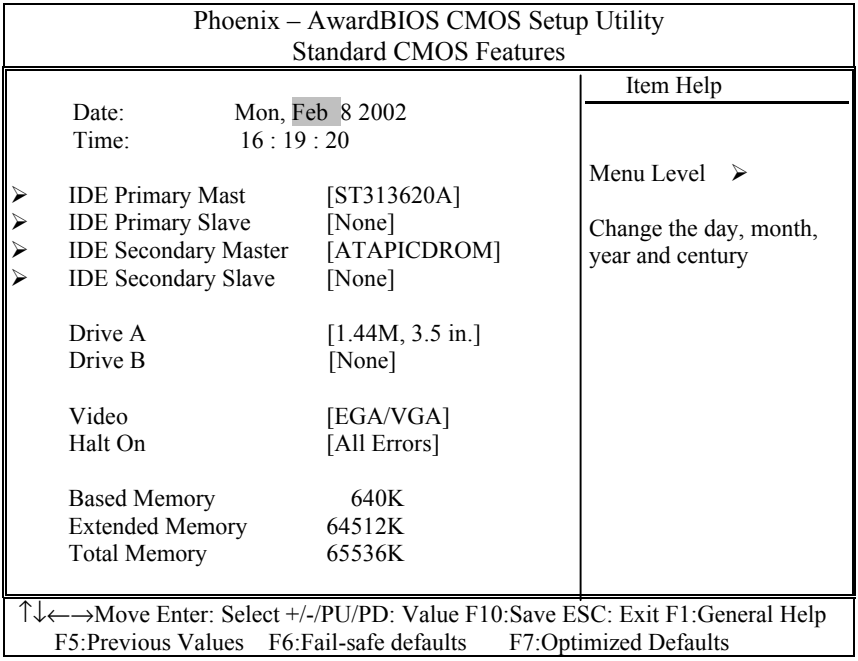
Supervisor / User Password
Use this menu to set User and Supervisor Passwords.

Save & Exit Setup
Save CMOS value changes to CMOS and exit setup.

Exit Without Save
Abandon all CMOS value changes and exit setup.

Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.



Phoenix – AwardBIOS CMOS Setup Utility
Standard CMOS Features

		Item Help
Date:	Mon, Feb 8 2002	
Time:	16 : 19 : 20	
		Menu Level ➢
➢ IDE Primary Mast	[ST313620A]	
➢ IDE Primary Slave	[None]	Change the day, month, year and century
➢ IDE Secondary Master	[ATAPICDROM]	
➢ IDE Secondary Slave	[None]	
Drive A	[1.44M, 3.5 in.]	
Drive B	[None]	
Video	[EGA/VGA]	
Halt On	[All Errors]	
Based Memory	640K	
Extended Memory	64512K	
Total Memory	65536K	

↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help
F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults

This table shows the selections that you can make on the Standard CMOS Menu

Item	Options	Description
Date	Month DD YYYY	Set the system date. Note that the 'Day' automatically changes when you set the date
Time	HH : MM : SS	Set the system time
IDE Primary Master	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
IDE Primary Slave	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
IDE Secondary Master	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
IDE Secondary Master	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
Drive A Drive B	None 360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify you
Base Memory	N/A	Displays the amount of conventional memory detected during boot up
Extended Memory	N/A	Displays the amount of extended memory detected during boot up
Total Memory	N/A	Displays the total memory available in the system

Primary HDDs / Secondary HDDs

The IDE adapters control the hard disk drive. Use a separate sub menu to configure each hard disk drive. Figure 2 shows the IDE primary master sub menu.

Phoenix – AwardBIOS CMOS Setup Utility
IDE Primary Master

		Item Help
IDE HDD Auto-Detection	[Press Enter]	
IDE Primary Master	[Auto]	Menu Level ➢➢
Access Mode	[Auto]	To auto-detect the HDD's size, head... on this channel
Capacity	13667 MB	
Cylinder	26480	
Head	16	
Precomp	0	
Landing Zone	26479	
Sector	63	

↑↓←→Move Enter: Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults

Use the legend keys to navigate through this menu and exit to the main menu. Use the Table listed below to configure the hard disk**.**

Item	Options	Description
IDE HDD Auto-detection	Press Enter	Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.
IDE Primary Master	None Auto Manual	Selecting 'manual' lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE !
Capacity	Auto Display your disk drive size	Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.
Access Mode	Normal LBA Large Auto	Choose the access mode for this hard disk
The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual'		
Cylinder	Min = 0 Max = 65535	Set the number of cylinders for this hard disk.
Head	Min = 0 Max = 255	Set the number of read/write heads
Precomp	Min = 0 Max = 65535	**** Warning: Setting a value of 65535 means no hard disk
Landing zone	Min = 0 Max = 65535	****
Sector	Min = 0 Max = 255	Number of sectors per track

Drive A / Drive B

These fields identify the types of floppy disk drive A or drive B that has been installed in the computer. The available specifications are:

360KB	1.2MB	720KB	1.44MB	2.88MB
5.25 in.	5.25 in.	3.5 in.	3.5 in.	3.5 in.

Video

This field selects the type of video display card installed in your system. You can choose the following video display cards:

EGA/VGA	For EGA, VGA, SEGA, SVGA or PGA monitor adapters. (default)
CGA 40	Power up in 40 column mode.
CGA 80	Power up in 80 column mode.
MONO	For Hercules or MDA adapters.

Halt On

This field determines whether the system will halt if an error is detected during power up.

No errors	The system boot will not be halted for any error that may be detected. (default)
All errors	Whenever the BIOS detects a non-fatal error, the system will stop and you will be prompted.
All, But Keyboard	The system boot will not be halted for a keyboard error; it will stop for all other errors
All, But Diskette	The system boot will not be halted for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not be halted for a keyboard or disk error; it will stop for all others.

Advanced BIOS Features

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

Phoenix – AwardBIOS CMOS Setup Utility Advanced BIOS Features		
Virus Warning	[Disabled]	Item Help
CPU Internal Cache	[Enabled]	
External Cache	[Enabled]	Menu Level ➢
CPU L2 Cache ECC Checking	[Enabled]	
Processor Number Feature	[Enabled]	Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
Quick Power On Self Test	[Enabled]	
First Boot device	[Floppy]	
Second Boot device	[HDD-0]	
Third Boot device	[LS120]	
Boot other device	[Enabled]	
Swap Floppy Drive	[Disabled]	
Boot Up Floppy Seek	[Enabled]	
Boot Up NumLock Status	[On]	
Gate A20 Option	[Normal]	
Typematic Rate Setting	[Disabled]	
Typematic Rate (Chars/Sec)	[6]	
Typematic Delay (Msec)	[250]	
Security Option	[Setup]	
OS Select For DRAM > 64MB	[Non-OS2]	
Video BIOS Shadow	[Enabled]	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

CPU Internal Cache/External Cache

These two categories speed up memory access. However, it depends on CPU/chipset design.

Enabled	Enable cache
Disabled	Disable cache

CPU L2 Cache ECC Checking

This item allows you to enable/disable CPU L2 Cache ECC checking.

The choice: Enabled, Disabled.

Processor Number Feature

When enabled, this enables Pentium III processor serial number feature.

The choice: Enabled, Disabled.

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Enabled	Enable quick POST
Disabled	Normal POST

First/Second/Third/Other Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The Choice: Floppy, LS120, ZIP100, HDD, SCSI, CDROM, LAN, Disabled.

Swap Floppy Drive

If the system has two floppy drives, you can swap the logical drive name assignments.

The choice: Enabled/Disabled.

Boot Up Floppy Seek

Seeks disk drives during boot up. Disabling speeds boot up.

The choice: Enabled/Disabled.

Boot Up NumLock Status

Select power on state for NumLock.

The choice: Enabled/Disabled.

Gate A20 Option

Select if chipset or keyboard controller should control GateA20.

Normal	A pin in the keyboard controller controls GateA20
Fast	Lets chipset control GateA20

Typematic Rate Setting

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

The choice: Enabled/Disabled.

Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a key stroke when you hold the key down.

The choice: 6, 8, 10, 12, 15, 20, 24, 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.

The choice: 250, 500, 750, 1000.

Security Option

Select whether the password is required every time the system boots or only when you enter setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will

boot and you can enter Setup freely.

OS Select For DRAM > 64MB

Select the operating system that is running with greater than 64MB of RAM on the system.

The choice: Non-OS2, OS2.

Video BIOS Shadow

This item allows you to change the Video BIOS location from ROM to RAM. Video Shadow will increase the video speed.

The choice: Enabled/Disabled.

C8000 - CBFFF Shadow/DC000 - DFFFF Shadow

Shadowing a ROM reduces the memory available between 640KB to 1024KB. These fields determine whether optional ROM will be copied to RAM or not.

The choice: Enabled/Disabled.

Advanced Chipset Features

Phoenix – AwardBIOS CMOS Setup Utility Advanced Chipset Features		
DRAM Timing By SPD	[Enabled]	Item Help
X DRAM Clock	[HOST CLK]	
X DRAM Cycle Length	[3]	Menu Level ➢
Memory Hole	[Disabled]	
P2C/C2P Concurrency	[Enabled]	
System BIOS Cacheable	[Enabled]	
Video RAM Cacheable	[Enabled]	
Frame Buffer Size	[16M]	
AGP Aperture Size	[16M]	
Panel Type	[07]	
Boot Device Select	[Auto]	
Power Supply Type	[AT]	
OnChip USB	[Enabled]	
USB Keyboard Support	[Disabled]	
USB Mouse Support	[Disabled]	
OnChip Sound	[Auto]	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

DRAM Settings

The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

DRAM Timing By SPD

This item allows you to select the DRAM timing determined by the timing information stored in SPD or set by the User manually. The default is Enabled. When this field is set as Enabled, the DRAM Timing items below will become read-only.

The Choice: Enabled, Disabled.

DRAM Clock .

This item allows you to select the related speed of SDRAM Memory bus. It chose the HOST-33M and CPU FSB bus speed is 133MHz, the SDRAM will run on 100MHz. This allows system memory bus runs on different speed with CPU FSB bus.

The Choice: HOST CLK, HCLK-33M, HCLK+33M

SDRAM Cycle Length

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the default value specified by the system designer.

The Choice: 2, 3.

Memory Hole

In order to improve performance, certain space in memory is reserved for ISA cards. This memory must be mapped into the memory space below 16MB.

The Choice: 15M-16M, Disabled.

System BIOS Cacheable

Selecting *Enabled* allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

The choice: Enabled, Disabled.

Video RAM Cacheable

Select Enabled allows caching of the video RAM , resulting in better system performance. However, if any program writes to this memory area, a system error may result.

The Choice: Enabled, Disabled.

Frame Buffer Size

Select the size of Video Frame Buffer Size. The Video controller is integrated inside the VIA 8606 chipset in Shared Memory Architecture (SMA). The setting decide the size of main memory will be allocated to Video controller as graphic frame buffer.

The Choice: 2M, 4M, 8M, 16M, 32M.

AGP Aperture Size

Select the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

The Choice: 4M, 8M, 16M, 32M, 65M, 128M, 256M.

Panel Type

Select the panel type. This BIOS pre-configure several Panel parameters for your selection. Call your dealer if you need customized BIOS to support your special Panel. Many panels now are duplicated to leave room for new models.

PANEL ID	PANEL TYPE
0	640x480 TFT, Direct Drive I/F
1	800x600 TFT, Direct Drive I/F
2	1024x768 2pixel/clk, Direct Drive I/F
3	1280x1024 TFT, Direct Drive I/F
4	640x480 DSTN, Direct Drive I/F
5	800x600 DSTN, Direct Drive I/F
6	1024x768 DSTN, Direct Drive I/F
7	1024x768 TFT 1pixel/clk at 65MHz, LVDS I/F
8	640x480 TFT, Direct Drive I/F
9	800x600 TFT, Direct Drive I/F
A	1024x768 TFT, Direct Drive I/F
B	1280x1024 TFT, Direct Drive I/F
C	1400x1050 TFT 2pixel/clk at 54MHz, LVDS I/F

D	**800X600 DSTN, Direct Drive I/F**
E	**1024X768 DSTN, Direct Drive I/F**
F	**1600X1200 TFT, 2pixel/clk, Direct Drive I/F**

The Choice: 1,2,3,4,5,~A,B,C,D,E,F.

Boot Device Select

Select *Auto* if you want BIOS automaticly detect the Display devices attached. If the selection is Both, the BIOS will drive both CRT and LCD Panel interface while system boot. However, this stetting can be overwrite by driver setting after system boot into Windows. The default is Auto.

The Choice: Auto, Both.

Power-Supply Type

This should be AT if you use AT power supply or ATX power supply but force to AT mode. This selection help BIOS provide the information to OS what kind power-supply the system use. The correct information provide to OS can avoid the Windows Shutdown issue.

The Choice: AT, ATX.

OnChip USB

This should be enabled if your system has a USB installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature.

The choice: Enabled, Disabled.

USB Keyboard Support

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

The choice: Enabled, Disabled.

USB Mouse Support

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have a USB Mouse.

The choice: Enabled, Disabled.

OnChip Sound

This should be Auto if your system will use on-board Audio features. If select disable, it will disable on-board Audio controller and AC97 codec.

The choice: Auto, Disabled.

Integrated Peripherals

Phoenix – AwardBIOS CMOS Setup Utility Integrated Peripherals		
OnChip IDE Channel0	[Enabled]	Item Help
OnChip IDE Channel1	[Enabled]	
IDE Prefetch Mode	[Enabled]	
Primary Master PIO	[Auto]	Menu Level ➢
Primary Salve PIO	[Auto]	
Secondary Master PIO	[Auto]	
Secondary Salve PIO	[Auto]	
Primary Master UDMA	[Auto]	
Primary Salve UDMA	[Auto]	
Secondary Master UDMA	[Auto]	
Secondary Salve UDMA	[Auto]	
Init Display First	[PCI Slot]	
IDE HDD Block Mode	[Enabled]	
Onboard FDC Controller	[Enabled]	
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
UART 2 Mode	[Standard]	
X IR Function Duplex	Half	
X TX,RX inverting enable	No, Yes	
↑↓←→ Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

OnChip IDE Channel 0

The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the primary IDE interface. Select Disabled to deactivate this interface

The choice: Enabled, Disabled.

OnChip IDE Channel 1

The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the secondary IDE interface. Select Disabled to deactivate this interface

The choice: Enabled, Disabled.

IDE Prefetch Mode

The onboard IDE drive interfaces supports IDE prefetching, for faster drive accesses. If you install a primary and/or secondary add-in IDE interface, set this field to *Disabled* if the interface does not support prefetching.

The choice: Enabled, Disabled.

Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

Primary/Secondary Master/Slave UDMA

Ultra DMA/33 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If your hard drive and your system software both support Ultra DMA/33/66, select Auto to enable BIOS support.

The Choice: Auto, Disabled.

Init Display First

This item allows you to decide to active whether PCI Slot or AGP first

The choice: PCI Slot, AGP.

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.

The choice: Enabled, Disabled

Onboard FDC Controller

Select Enabled if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select Disabled in this field.

The choice: Enabled, Disabled.

Onboard Serial Port 1/Port 2

Select an address and corresponding interrupt for the first and second serial ports.

The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

UART 2 Mode

This item allows you to select which mode for the Onboard Serial Port 2.

The choice: Standard, HPSIR, ASKIR.

IR Function Duplex

This item allows you to select the IR half/full duplex function.

The Choice: Half, Full.

TX,RX inverting enable

This item allow you to enable the TX, RX inverting which depends on different H/W requirement. This field is not recommended to change its default setting for avoiding any error in your system

The Choice: No, No/ No,Yes(Default)/ Yes, No/ Yes, Yes.

Onboard Parallel Port

This item allows you to determine onboard parallel port controller I/O address setting.

The choice: 378H/IRQ7, 278H/IRQ5, 3BC/IRQ7, Disabled.

Onboard Parallel Port Mode

Select an operating mode for the onboard parallel (printer) port. Select *Normal, Compatible,* or *SPP* unless you are certain your hardware and software both support one of the other available modes.

The choice: SPP, EPP, ECP, ECP+EPP.

ECP Mode Use DMA

Select a DMA channel for the parallel port for use during ECP mode.

The choice: 3, 1.

EPP Mode Select

Select EPP port type 1.7 or 1.9.

The choice: EPP1.7, 1.9.

Onboard Serial Port 3/Port 4

Select an address for the third and fourth serial ports.

The choice: 3F0, 2F0, 3E0, 2E0, Disabled.

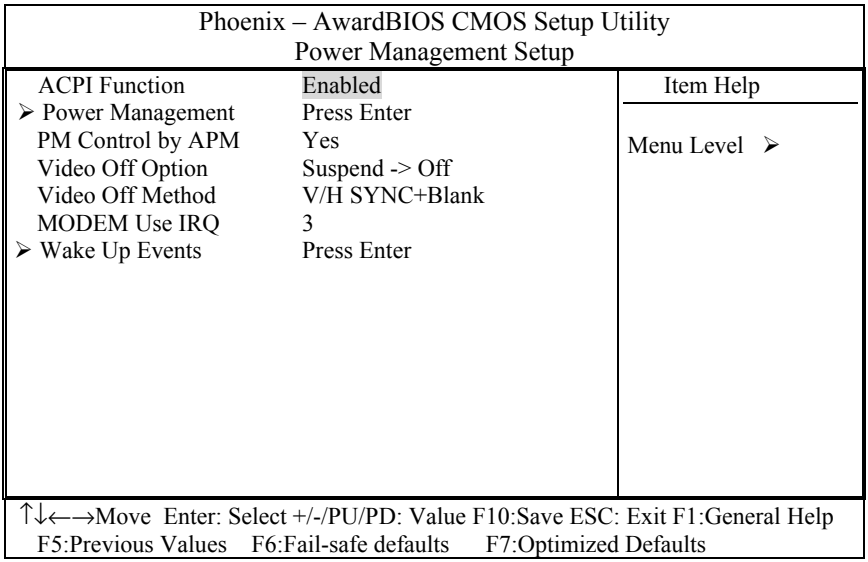
Serial Port 3/Port 4 Use IRQ

Select a corresponding interrupt for the third and fourth serial ports.

The choice: 3, 4, 5, 7, 10, 11.

Power Management Setup

The Power Management Setup allows you to configure you system to most effectively save energy while operating in a manner consistent with your own style of computer use.


Phoenix – AwardBIOS CMOS Setup Utility
Power Management Setup
ACPI Function Enabled
➢ Power Management Press Enter
PM Control by APM Yes
Video Off Option Suspend -> Off
Video Off Method V/H SYNC+Blank
MODEM Use IRQ 3
➢ Wake Up Events Press Enter
Item Help
Menu Level ➢
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help
F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults

ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI).

The choice: Enabled, Disabled.

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. HDD Power Down
2. Doze Mode
3. Suspend Mode

There are four selections for Power Management, three of which have fixed mode settings.

Disable (default)	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management -- ONLY AVAILABLE FOR SL CPU's. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

PM Control by APM

When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock. If the Max. Power Saving is not enabled, this will be preset to *No*.

Video Off Option

When enabled, this feature allows the VGA adapter to operate in a power saving mode.

Always On	Monitor will remain on during power saving modes.
Suspend --> Off	Monitor blanked when the systems enters the Suspend mode.
Susp,Stby --> Off	Monitor blanked when the system enters either Suspend or Standby modes.
All Modes --> Off	Monitor blanked when the system enters any power saving mode.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

MODEM Use IRQ

This determines the IRQ in which the MODEM can use.

The choice: 3, 4, 5, 7, 9, 10, 11, NA.

PM Events

PM events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything which occurs to a device which is configured as *On*, even when the system is in a power down mode.

VGA
When *Enabled,* you can set the VGA awakens the system.

LPT & COM
When *On of* LPT & COM, any activity from one of the listed system peripheral devices or IRQs wakes up the system.

HDD & FDD
When *On of HDD* & FDD, any activity from one of the listed system peripheral devices wakes up the system.

PCI Master
When *On of PCI Master*, any activity from one of the listed system peripheral devices wakes up the system.

Modem Ring Resume
An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

RTC Alarm Resume
When *Enabled,* your can set the date and time at which the RTC (real-time

clock) alarm awakens the system from Suspend mode.

IRQs Activity Monitoring

The following is a list of IRQ's, **I**nterrupt **R**e**Q**uests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.

When set *On*, activity will neither prevent the system from going into a power management mode nor awaken it.

1. **IRQ3 (COM 2)**
2. **IRQ4 (COM 1)**
3. **IRQ5 (LPT 2)**
4. **IRQ6 (Floppy Disk)**
5. **IRQ7 (LPT 1)**
6. **IRQ8 (RTC Alarm)**
7. **IRQ9 (IRQ2 Redir)**
8. **IRQ10 (Reserved)**
9. **IRQ11 (Reserved)**
10. **IRQ12 (PS / 2 Mouse)**
11. **IRQ13 (Coprocessor)**
12. **IRQ14 (Hard Disk)**
13. **IRQ15 (Reserved)**

PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

Phoenix – AwardBIOS CMOS Setup Utility PnP/PCI Configurations		
PnP OS Installed	[No]	Item Help
Reset Configuration Data	[Disabled]	Menu Level ➢
Resources Controlled By	[Auto(ESCD)]	Default is Disabled. Select Enabled to reset Extended System Configuration Data(ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot
➢ IRQ Resources	[Press Enter]	
➢ DMA Resources	[Press Enter]	
PCI/VGA Palette Snoop	[Disabled]	
Assign IRQ For VGA	[Enabled]	
Assign IRQ For USB	[Enabled]	
↑↓←→Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults		

PNP OS Installed

This item allows you to determine install PnP OS or not.

The choice: Yes, No.

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup.

The choice: Enabled, Disabled.

Resource controlled by

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability

means absolutely nothing unless you are using a Plug and Play operating system such as Windows®98 or Windows®2000. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a "➢").

The choice: Auto, Manual.

IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt. This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.

The Choice: *Legacy ISA* and *PCI/ISA PnP*.

DMA Resources

When resources are controlled manually, assign each system DMA channel a type, depending on the type of device using the DM channel. Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.

Choices are *Legacy ISA* and *PCI/ISA PnP*.

PCI/VGA Palette Snoop

Leave this field at *Disabled*.

Choices are Enabled, Disabled.

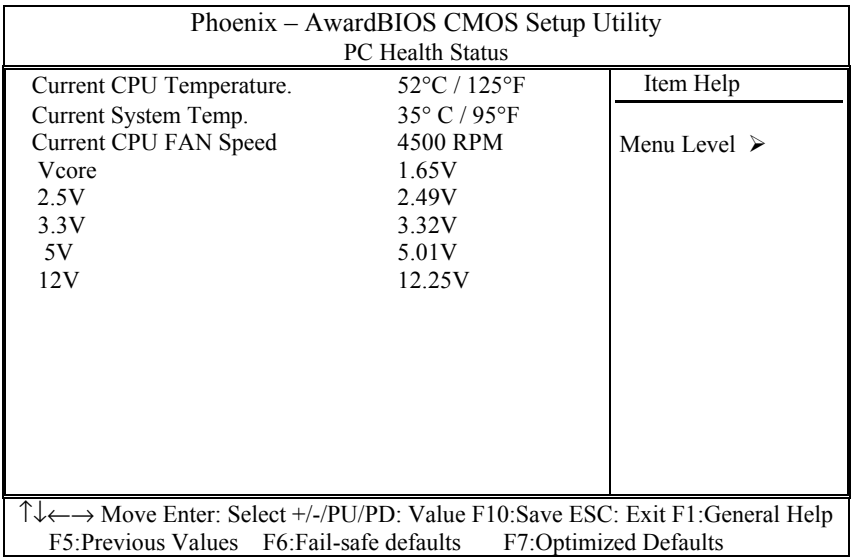
Assign IRQ For VGA/USB

Enable/Disable to assign an IRQ for USB/VGA.

Choices are Enabled, Disabled.

PC Health Status

This section helps you to get more information about your system including CPU temperature, FAN speed and voltages. It is recommended that you contact with your motherboard supplier to get proper value about your setting of the CPU temperature.


Phoenix – AwardBIOS CMOS Setup Utility
PC Health Status
Current CPU Temperature. 52°C / 125°F
Current System Temp. 35° C / 95°F
Current CPU FAN Speed 4500 RPM
Vcore 1.65V
2.5V 2.49V
3.3V 3.32V
5V 5.01V
12V 12.25V
Item Help
Menu Level ➢
↑↓←→ Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help
F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults

Current CPU Temperature

Shows CPU Temperatue.

Current System Temp.

Show System Temperature.

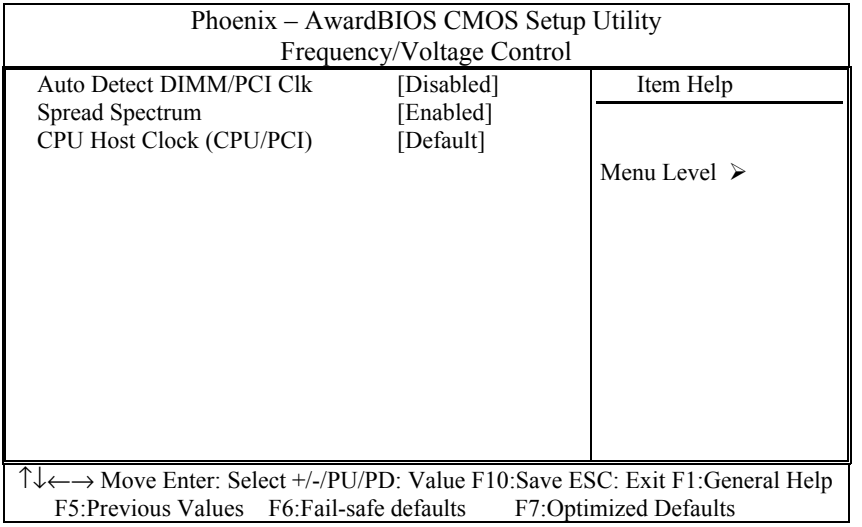
Current CPU FAN Speed

Shows CPU FAN speed.

Vcore/2.5V/3.3V/5V/12V Voltages

Show power rails voltages.

Frequency/Voltage Control


Phoenix – AwardBIOS CMOS Setup Utility
Frequency/Voltage Control
Auto Detect DIMM/PCI Clk [Disabled]
Spread Spectrum [Enabled]
CPU Host Clock (CPU/PCI) [Default]
Item Help
Menu Level ➢
↑↓←→ Move Enter: Select +/-/PU/PD: Value F10:Save ESC: Exit F1:General Help
F5:Previous Values F6:Fail-safe defaults F7:Optimized Defaults

Auto Detect DIMM/PCI CLK

This item allows you to enable/disable auto detect DIMM/PCI Clock. Turning off the un-used PCI and DRAM clock may help to EMI issue. Since there is no PCI clock routing specification for PICMG backplane, some system may have PCI card detect issue. In that case, please disable this item.

The choice: Enabled, Disabled.

Spread Spectrum Modulated

This item allows you to enable/disable the spread spectrum modulate. The spread spectrum technology also helps to alleviate the EMI.

The choice: Enabled, Disabled.

CPU Host Clock (CPU/PCI)

This item allows you to select the CPU speed. Over-clocking may cause system hang or unstable. *There is no guarantee for any over-speed operation.*

Load Fail-Safe Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? N

Pressing 'Y' loads the BIOS default values for the most stable, minimal-performance system operations.

Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory settings for optimal performance system operations.

Supervisor/User Password Setting

You can set either supervisor or user password, or both of then. The differences between are:

supervisor password : can enter and change the options of the setup menus.

user password : just can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

Exit Selecting

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? Y

Pressing "Y" stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)? Y

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

Appendixes

A I/O Port Address Map
B Interrupt Request Lines (IRQ)
C POST Beep
D LCD interface Connectors

A. I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. There are a total of 1K port address space available. The following table lists the I/O port addresses used on the Industrial CPU Card.

Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 06Fh	Keyboard Controller
070h - 07Fh	Real Time Clock, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy Signal
0F1h	Reset Math Coprocessor
1F0h - 1F7h	IDE Interface
278 - 27F	Parallel Port #2(LPT2)
2F8h - 2FFh	Serial Port #2(COM2)
2B0 - 2DF	Graphics adapter Controller
378h - 3FFh	Parallel Port #1(LPT1)
360 - 36F	Network Ports
3B0 - 3BF	Monochrome & Printer adapter
3C0 - 3CF	EGA adapter
3D0 - 3DF	CGA adapter
3F0h - 3F7h	Floppy Disk Controller
3F8h - 3FFh	Serial Port #1(COM1)

B. Interrupt Request Lines (IRQ)

There are a total of 15 IRQ lines available on the Industrial CPU Card. Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on the Industrial CPU Card.

Level	Function
IRQ0	System Timer Output
IRQ1	Keyboard
IRQ2	Interrupt Cascade
IRQ3	Serial Port #2
IRQ4	Serial Port #1
IRQ5	Reserved
IRQ6	Floppy Disk Controller
IRQ7	Parallel Port #1
IRQ8	Real Time Clock
IRQ9	Software Redirected to Int 0Ah
IRQ10	Reserved
IRQ11	Reserved
IRQ12	PS/2 Mouse
IRQ13	80287
IRQ14	Primary IDE
IRQ15	Secondary IDE

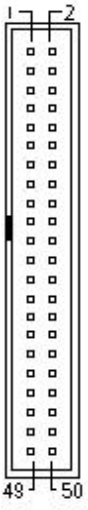
C. POST Beep

Currently there are two kinds of beep codes in BIOS. This code indicates that a **video error** has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps.

The other code indicates that your **DRAM error** has occurred. This beep code consists of a single long beep repeatedly.

LCD TTL Connector

LCD TTL connector is designed for wiring the LCD direct-drive TTL signals to the LCD Panel.



Part No:
OUPIIN 3215-50-CSB Box Header 1.27mmx2.54mm Mates with OUPIIN 1202, 1203 series I.D.C Socket for Cables.

Signal Name	Pin #	Pin #	Signal Name
HSYNC	1	2	VDD_SAFE
+12V	3	4	+12V_SAFE
VDD	5	6	EN_VDD
VSYNC	7	8	EN_12V
GND	9	10	DE
DCLK	11	12	GND
GND	13	14	GND
FPD0	15	16	FPD1
FPD2	17	18	FPD3
FPD4	19	20	FPD5
FPD6	21	22	FPD7
FPD8	23	24	FPD9
FPD10	25	26	FPD11
FPD12	27	28	FPD13
FPD14	29	30	FPD15
FPD16	31	32	FPD17
FPD18	33	34	FPD19
FPD20	35	36	FPD21
FPD22	37	38	FPD23
FPD24	39	40	FPD25
FPD26	41	42	FPD27
FPD28	43	44	FPD29
FPD30	45	46	FPD31
FPD32	47	48	FPD33
FPD34	49	50	FPD35

LCD LVDS Connector

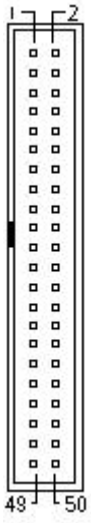
LCD LVDS connector is designed for wiring the LVDS signals to the LCD Panel.

PART No:
JAE
FI-SE20P-HF
1.25mm Right – Angle 20-pin.

Signal Name	Pin #	Pin #	Signal Name
VDD_SAFE	1	2	VDD_SAFE
GND	3	4	GND
D0-	5	6	D0+
GND	7	8	D1-
D1+	9	10	GND
D2-	11	12	D2+
GND	13	14	CLK-
CLK+	15	16	GND
N.C.	17	18	N.C.
GND	19	20	GND

Pin Assignment Examples for TTL LCD Interface:

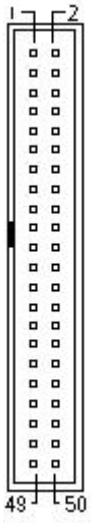
1. TFT 18-bits 1Pixel/clock LCD Panel.



Signal Name	Pin #	Pin #	Signal Name
HSYNC	1	2	VDD_SAFE
+12V	3	4	+12V_SAFE
VDD	5	6	EN_VDD
VSYNC	7	8	EN_12V
GND	9	10	DE
DCLK	11	12	GND
GND	13	14	GND
	15	16	
BLUE0	17	18	BLUE1
BLUE2	19	20	BLUE3
BLUE4	21	22	BLUE5
	23	24	
GREEN0	25	26	GREEN1
GREEN2	27	28	GREEN3
GREEN4	29	30	GREEN5
	31	32	
RED0	33	34	RED1
RED2	35	36	RED3
RED4	37	38	RED5
	39	40	
	41	42	
	43	44	
	45	46	
	47	48	
	49	50	

Select Panel ID 0 in BIOS Setup for 640x480 resolution.
Select Panel ID 1 in BIOS Setup for 800x600 resolution.

2. TFT 2Pixels/clock 18-bits Two ports LCD Panel



Signal Name	Pin #	Pin #	Signal Name
HSYNC	1	2	VDD_SAFE
+12V	3	4	+12V_SAFE
VDD	5	6	EN_VDD
VSYNC	7	8	EN_12V
GND	9	10	DE
DCLK	11	12	GND
GND	13	14	GND
RED_ODD_0	15	16	RED_EVEN_0
RED_ODD_1	17	18	RED_EVEN_1
RED_ODD_2	19	20	RED_EVEN_2
RED_ODD_3	21	22	RED_EVEN_3
RED_ODD_4	23	24	RED_EVEN_4
RED_ODD_5	25	26	RED_EVEN_5
GREEN_ODD_0	27	28	GREEN_EVEN_0
GREEN_ODD_1	29	30	GREEN_EVEN_1
GREEN_ODD_2	31	32	GREEN_EVEN_2
GREEN_ODD_3	33	34	GREEN_EVEN_3
GREEN_ODD_4	35	36	GREEN_EVEN_4
GREEN_ODD_5	37	38	GREEN_EVEN_5
BLUE_ODD_0	39	40	BLUE_EVEN_0
BLUE_ODD_1	41	42	BLUE_EVEN_1
BLUE_ODD_2	43	44	BLUE_EVEN_2
BLUE_ODD_3	45	46	BLUE_EVEN_3
BLUE_ODD_4	47	48	BLUE_EVEN_4
BLUE_ODD_5	49	50	BLUE_EVEN_5

Select Panel ID 2 in BIOS setup for 1024x768 resolution.

Note: Contact your dealer for LCD Cable kit and Video BIOS customization.

Copyright CJB Computer Job Srl (C) ~ 2002~2004